

# **NC-3500 Series**

## **Multi Currency Banknote Counter**

**Service Manual**  
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## **Chapter 1 Introduction**

### **1.1 About NC-3500 Service Manual**

This manual is for the maintenance of NC3500 and it includes the disassembly process, spare part replacement, basic inspection and repair.

### **1.2 Important Safety Precaution**

- NC-3500 is exclusively for indoor usages only, please do not use or install it outdoor.
- Please check the adaptor and power cord periodically to protect from any damages. The power source is between AC 100 - 240V, 50/60 Hz.
- Keep NC-3500 away from magnets, activated cellular phones, electrical appliances, or speakers within 13 cm/ 5 inches.
- Please disconnect power adaptor and remove batteries when the machine left unused for a long time.
- NC-3500 is designed for notes processing. Please process banknotes ought to be verified in the four orientations (“Head Up-Right”, “Head Reversed”, “Tail Up-Right” or “Tail Reversed”).

### **1.3 Abbreviations and Acronyms**

IR	Infrared
MA	Masterwork Automodules
MB	Megabyte
MG	Magnetic
MR	Magnetoresistive
MT	Metal Thread
PC	Personal Computer
USB	Universal Serial Bus
UV	Ultraviolet



## **1.4 Contact Information**

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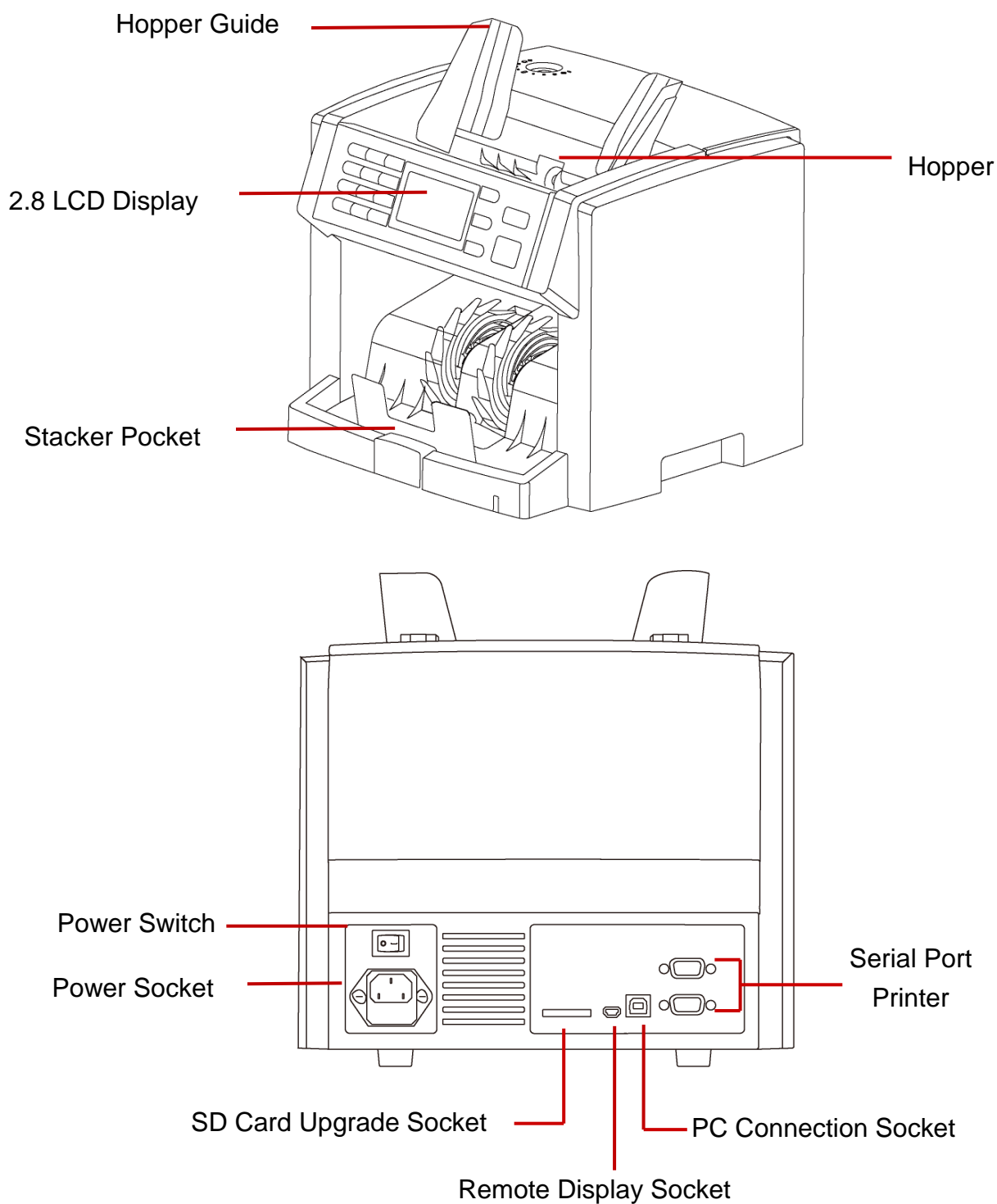
Fax: +886 2 2655 7996

Email: [support@automodules.com](mailto:support@automodules.com)



## Chapter 2 NC-3500 Outline

### 2.1 NC-3500 At A Glance





## 2.2 Specification

### 2.2.1 Functional and Mechanical Specification

<b>Sensors:</b>	<b>IR Array, MR, UV</b>
<b>Denomination Detection:</b>	IR Transmission
<b>Available Currencies</b>	USD, EUR, and up to 5 additional currencies
<b>Countable Note Size:</b>	60 x 85 x 0.08 mm - 100 x 190 x 0.12 mm
<b>Hopper Capacity:</b>	500 notes (circulated notes)
<b>Stacker Capacity:</b>	200 notes (circulated notes)
<b>Display:</b>	2.8 Inch LCD
<b>Display Language:</b>	English or Customized
<b>Feed System:</b>	Roller friction system
<b>Piece Count Speed:</b>	1000/ 1200/ 1500 notes/min. (selectable)
<b>Denomination</b>	<b>Count</b> 900, 1200, 1500 notes/min
<b>Speed:</b>	
<b>Dimensions (mm):</b>	285 (W) x 270 (D) x 280 (H)
<b>Weight:</b>	Approx. 7.2 kg
<b>Options:</b>	Remote Display / Thermal Printer

### 2.2.2 Electrical Specification

<b>Power Supply:</b>	<b>100-240V AC, 50/60Hz</b>
<b>Power Consumption:</b>	Max. 40W



## 2.2.3 Interface Specification

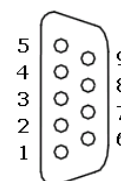
### 2.2.3.1 Thermal Printer (RS-232)

#### (A) Communication Conditions

Item	Specification
Standard:	EIA RS-232C
Baud Rate:	9600bps ,38400bps ,115200bps
Synchronous Method:	Asynchronous
Data Format:	Start
	Data
	Parity
	Stop
Connector:	D-sub 9pin (male)
Cable length:	15 m max

#### (B) Interface Connector - Equipment Side Connector

Pin NO.	Signal	Direction
1	—	—
2	—	—
3	TXD	NC3500→thermal Printer
4	—	—
5	GND	—
4	—	—
7	—	—
8	—	—
9	—	—







### 2.2.3.2 Remote Display

#### (A) Communication Conditions

Item		Specification
Standard:		UART
Baud Rate:		115200bps
Synchronous Method:		Asynchronous
Data Format:	Start	1 bit
	Data	8 bits
	Parity	None
	Stop	1 bit
Connector:		Mini USB 5 pins (female)
Cable length:		1.5m max

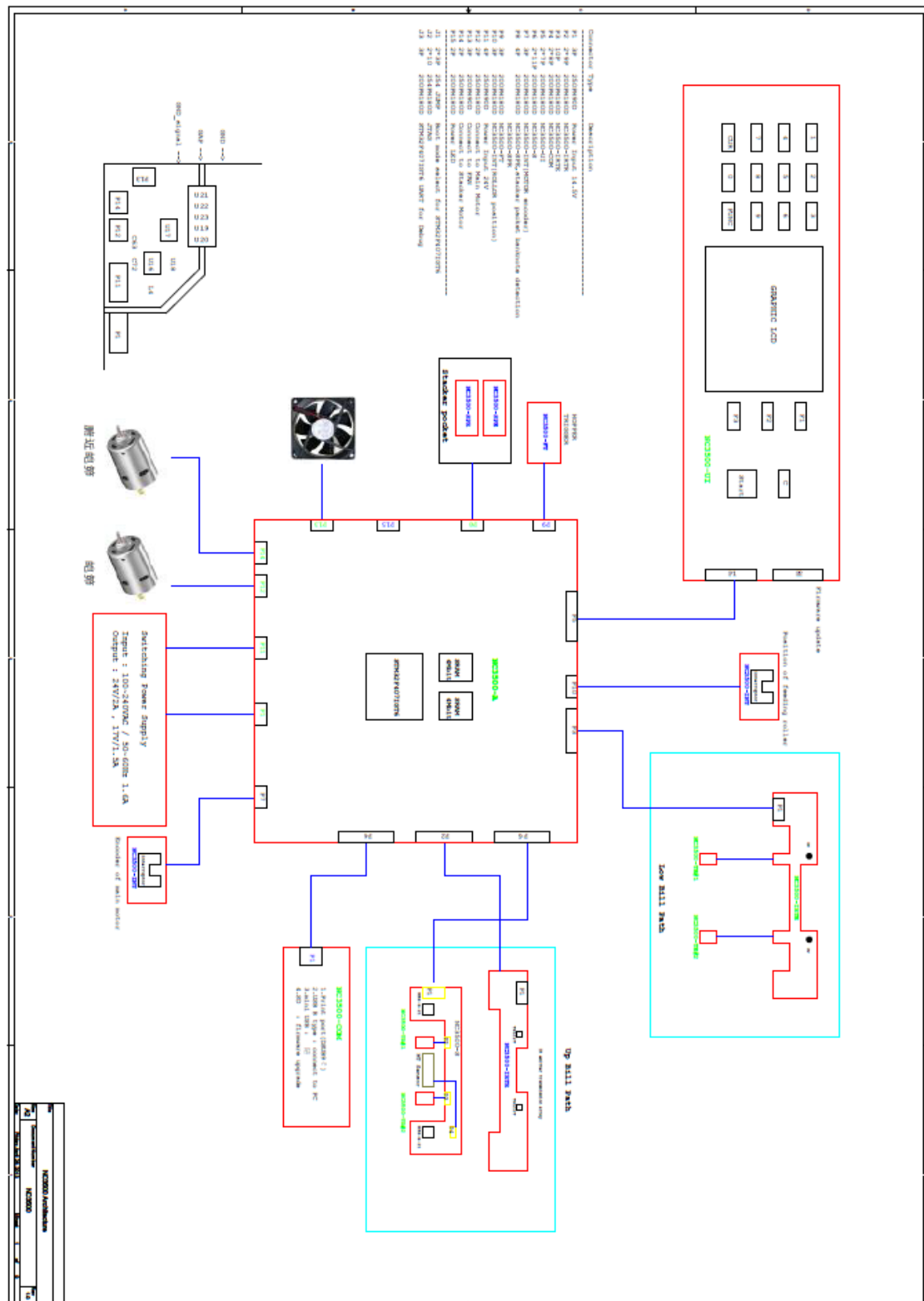
#### (B) Interface Connector - Equipment Side Connector

Pin NO.	Signal	Direction
1	VCC	——
2	VCC	——
3	RXD	——
4	TXD	NC3500→Remote display
5	GND	——

### 2.2.3.3 PC

Item	Specification
Data Communication Port	USB

## 2.3 System Overview





## **Chapter 3                      Maintenance**

### **3.1 Cleaning the Cover of NC-3500**

- ❶ Prepare a mixture of a gentle kitchen-use detergent (one that does not contain abrasive powder or strong chemicals such as acid or alkaline.) Use 5 parts water to 1 part detergent.
- ❷ Absorb the diluted detergent into a sponge.
- ❸ Squeeze excess liquid from the sponge.
- ❹ Wipe the cover with the sponge, use a circular motion and take care not to let any excess liquid drips into the interior of the device.
- ❺ Wipe the surface to remove the detergent.
- ❻ Rinse the sponge with clean running water.
- ❼ Wipe the over with the clean sponge.
- ❽ Wipe the surface again with a dry, soft lint-free cloth.
- ❾ Wait for the surface to dry completely and remove any fibers.

### **3.2 Cleaning the bill path of NC-3500**

- ❶ Open the bill path.
- ❷ Gently wipe it or dust the bill path with a MA brush or a dry, soft lint-free cloth.
- ❸ If stains remain, moisten a soft, lint-free cloth with water or a 50-50 mixture of isopropyl alcohol and water that does not contain impurities.
- ❹ Wring out as much of the liquid as you can.
- ❺ Wipe the bill path and the sensor surface again; do not let any liquid drip into the device.
- ❻ Repeat 1-5 to clean the conveyer path.

\*NOTE: Avoid spraying cleaner directly on the device, and be sure to dry the bill path before closing it.









## **Chapter 4            Maintenance Mode**

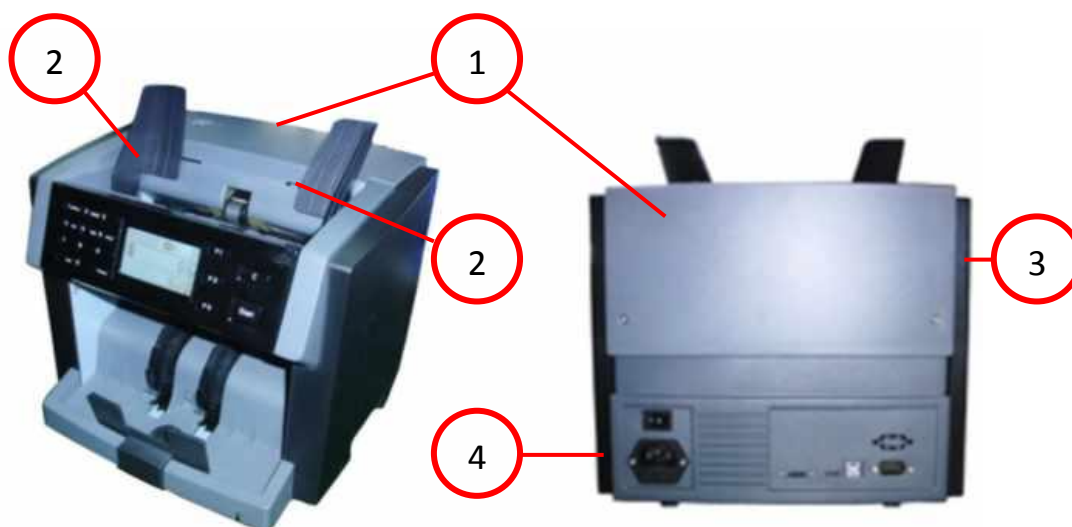
## Chapter 5 NC-3500 part list and Disassembly

### 5.1 Tool preparation



		Screwdriver (+)
		Screwdriver (-)
		Long Nose Pliers
		7 mm Wrench
		3 mm Hex Key
		1.5 mm Hex Key

## 5.2 Housing



No.	Part Number	Part Name	Picture	Unit
1	4PP02010120010	Top cover- upper part		1
	4PP02010120020	Top cover- lower part		1
	4SC10030080210	Ø3*8 Countersunk		10
	3PP52500100170	Hopper guide gear holder		1
	4PP92610100010	Hopper guide holder-L		1
	4PP92610100020	Hopper guide holder-R		1
	3GE00814261100	Gear-14T		1

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	4NC90800120010	Hopper guide gear bracket		1
	4SC13040060210	Ø4*6 self tapping screw - Countersunk		2
2	3PP92110100010	Hopper guide- L		1
	3PP92110100020	Hopper guide- R		1
3	4PP32010100010	Side Panel-L		1
	4SC13030080210	Ø3*10 self tapping screw - Countersunk		2
	4SC90040100210	M4x10-Round head w/ spring washer		2
4	4PP42010100010	Side Panel-R		1
	4SC13030080210	Ø3*10 self tapping screw - Countersunk		2
	4SC90040100210	M4x10-Round head w/ spring washer		2

## 5.2.1 Side Panel Left and Right

Left



Right

1. Prepare the machine and all the necessary tools.



2. Turn the machine to bottom side and loosen the four screws (M4x10-Round head w/ spring washer)



3. Open the upper bill path and loosen the screw (Ø3\*10 self tapping screw – Countersunk) on the right side.



4. Turn the machine to the front side and loosen the screw (Ø3\*10 self tapping screw – Countersunk) on the stacker.

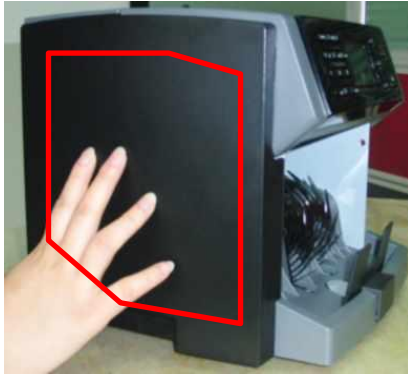


5. Disassemble the Side Panel-R from the machine.

**\*Note: When assembling the side cover, please make sure the plastic cover and metal plate fitted to each other.**







6. Repeat the steps 1 to 5 to dismount the Side Panel-L.

**\*Note:** Please notice the same as above when assembling the side panel.



### 5.2.2 Top Cover-Upper and Lower



1. Loosen the screw (Ø3\*8 self tapping screw –Countersunk) on the right side of top cover.



2. Loosen the screw (Ø3\*8 self tapping screw –Countersunk) on the left side of top cover

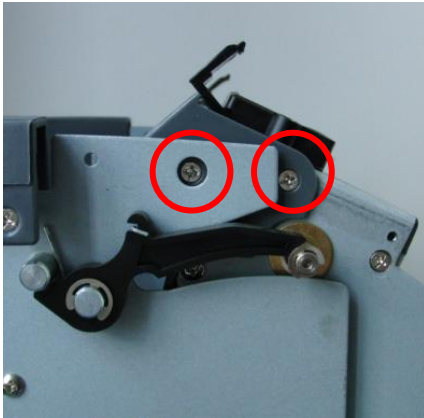


3. Loosen the two screws (Ø3\*8 self tapping screw –Countersunk) on the back side of top cover

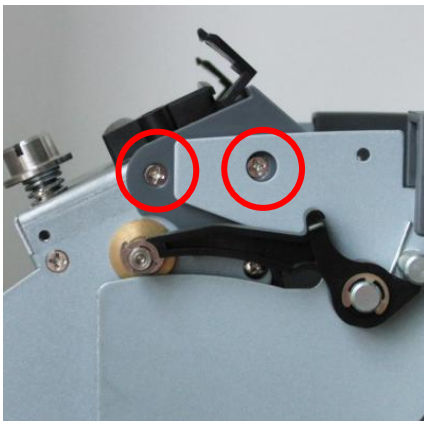
4. Disassemble top cover- upper part from the machine.



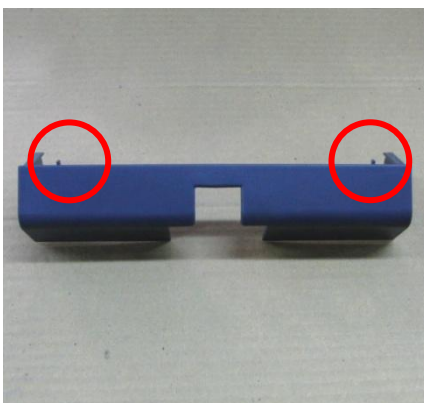
5. Open the upper bill path and loosen the two screws (Ø3\*8 self tapping screw – Countersunk) on the right side.



6. Open the upper bill path and loosen the two screws (Ø3\*8 self tapping screw – Countersunk) on the left side.

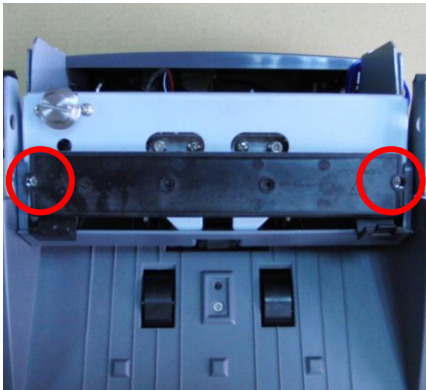


7. Disassemble top cover- lower part from the machine.



**\*Note: When assembling the top covers, please make sure the two plastic latches fitted to the upper cover**

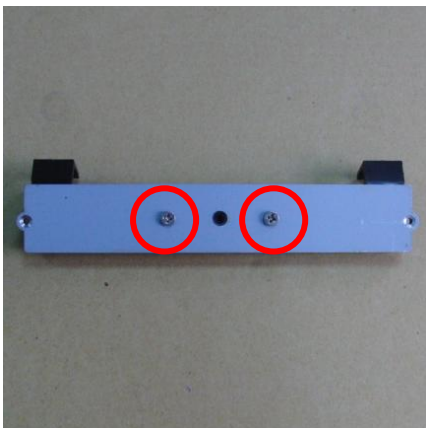
### 5.2.3 Hopper guide set



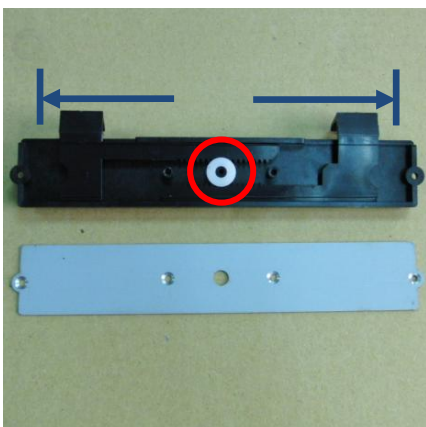
1. Loosen the two screws (Ø3\*8 Countersunk) on the top of hopper guide set.



2. Disassemble hopper guide set from the machine.



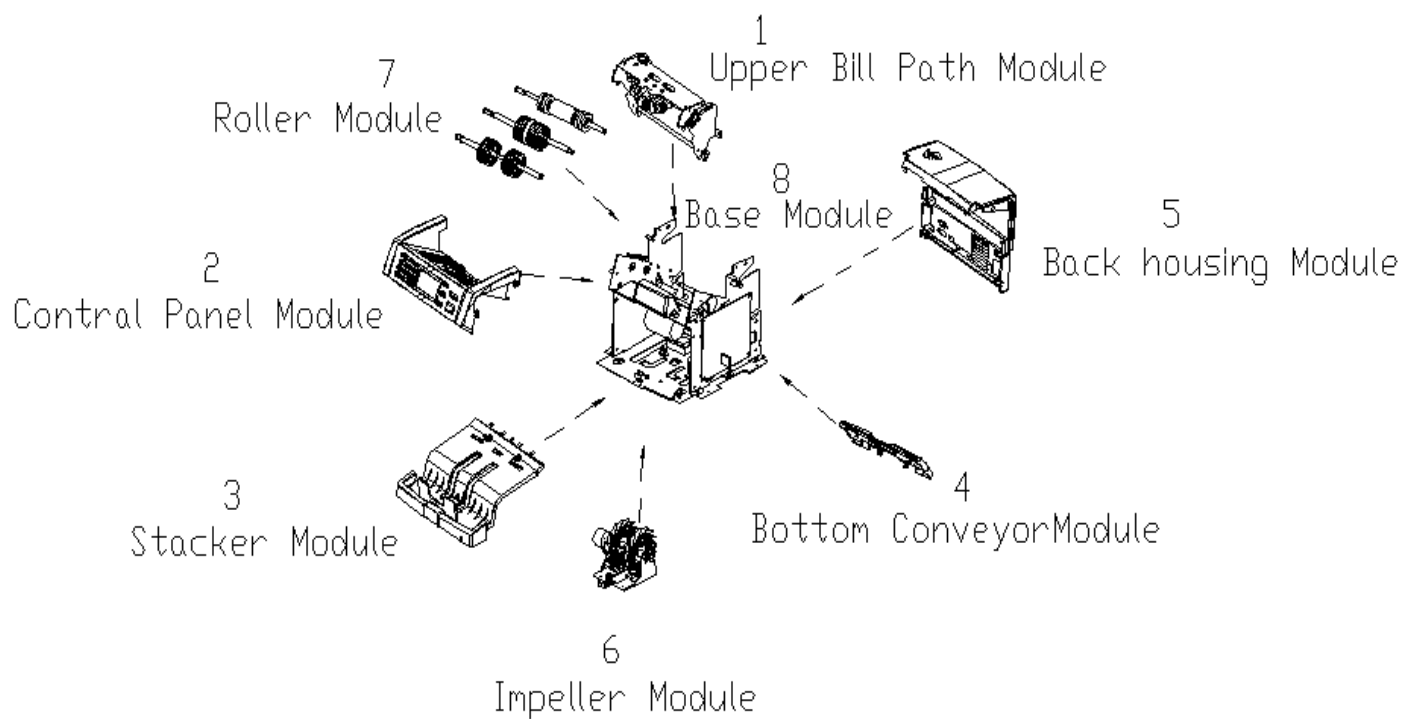
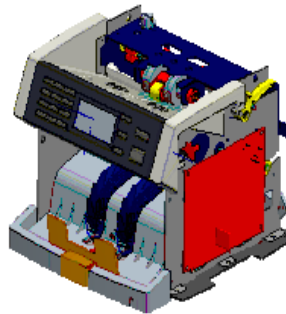
3. Loosen the two screws (Ø4\*6 self tapping screw - Countersunk) on the back side of hopper guide set.



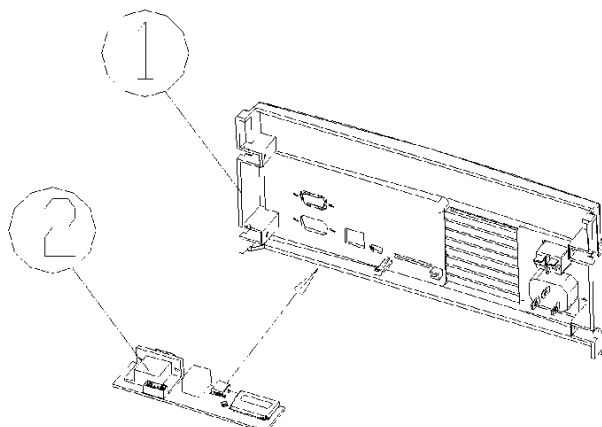
4. Disassemble hopper guide gear bracket from the hopper guide set. The gear and hopper guide holders can be disassembled directly.

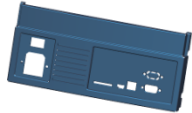



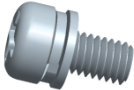
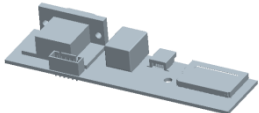

**\*Note:** When assembling the hopper guide holders, please move the hopper guide holders to the very end of the gear holder then place the gear onto the central pole.

### 5.3 Total Assembly

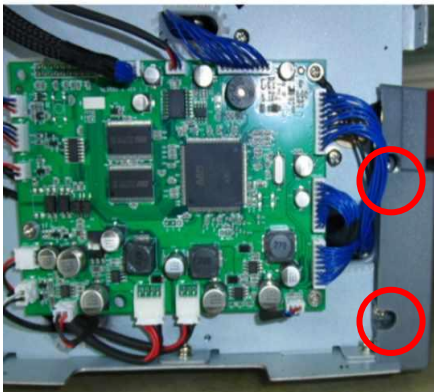


### 1.3.1 Back Housing Module



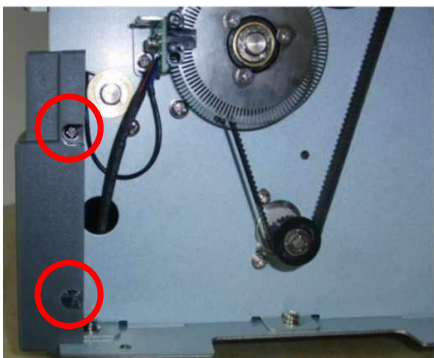
No.	Part Number	Part Name	Picture	Unit
1	4PP22010120010	Back Lid		1
	4OC22240000300	Power supply bracket		1
	4OC22240000200	Power Switch		1
	4SC10030080210	M3x8 - Countersunk		2
	4SC90030060210	3x6-Round head w/ spring washer		4
2	4OP351006-001	PCB COM		1
	4SC33030050210	ST3*6 self tapping screw		1





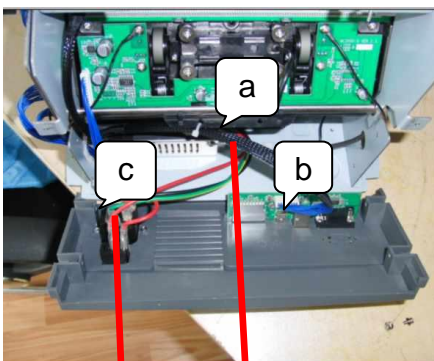
1. Turn the machine to right side

Loosen the two screws (3x6-Round head w/ spring washer) on the back lid



2. Turn the machine to left side

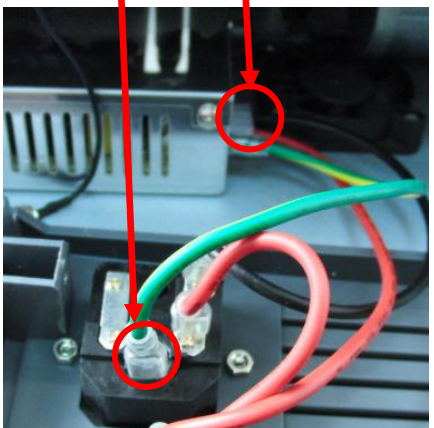
Loosen the two screws (3x6-Round head w/ spring washer) on the back lid



3. Disassemble the back lid from the machine.

- a. Unplug the power connector (Red and Black wire) on the power supply
- b. Unplug the (A to COM 16\*290) COM board cable
- c. Unplug the ground cable (Yellow-Green) from power supply bracket. **Do not unplug from the other side of ground line. It may damage the joints on switch power.**

**\*Note: Do not pull away the back lid until unplug the connected cables.**





4. Loosen the screw (ST3\*6 self tapping screw) on the COM board.

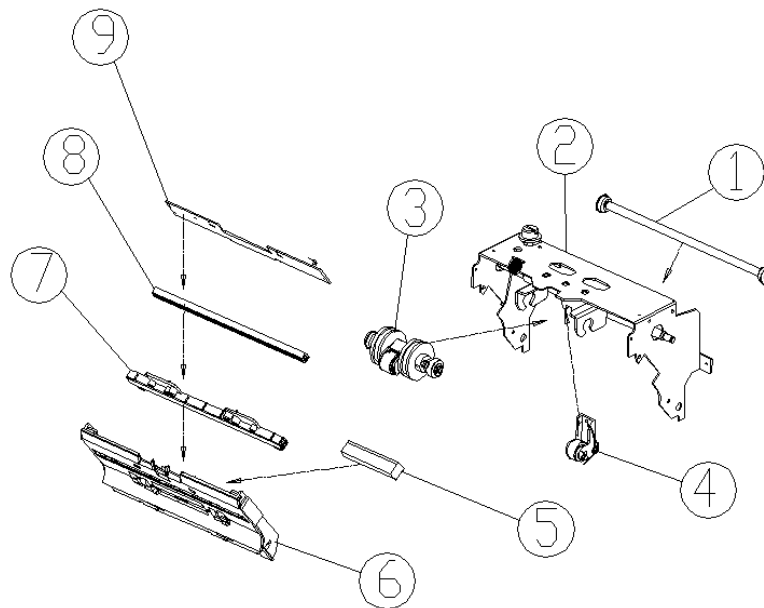
Turn to the other side of back lid; Use the pliers to loosen the two hex screws of 9-pin USB connector.






The PCB COM can be removed from the back lid.



### 1.3.2 Upper Bill Path Module



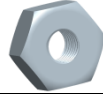
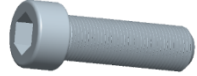



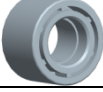


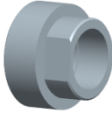
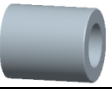




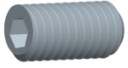



No.	Part Number	Part Name	Picture	Unit
1	4TP00008030040	Top Module Axis		1
	4TP10816060010	Top frame shaft sleeve (8-16)		2
	4WA60600000010	E-ring (Ø6)		4

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2	4NC90803000010	Top Frame		1
	4TP20000030030	Gap Adjustment Screw M8 (P0.5)		1
	4TP10608030010	Top Module Latch		2
	4WA60400000010	E-ring (Ø4)		2
	4TP20000030020	Gap adjustment disc		1
	4SP31140210010	Gap adjustment screw spring		1
	4TP20000030010	Gap adjustment screw bracket		1
	4SP01150070010	Spring for retarding module Torsion (1.5-Ø14)		1
	4TP00012030010	Retarding wheel shaft		1
	4NC51500120010	Retarding wheel bracket		1
	4TP10816060010	Top frame shaft sleeve (8-16)		2
	4SC80050160210	M5x16 - hex socket		1
	4SC90030100210	M3x10-Round head w/ spring washer		2
	4SC90040100210	M4x10-Round head w/ spring washer		4






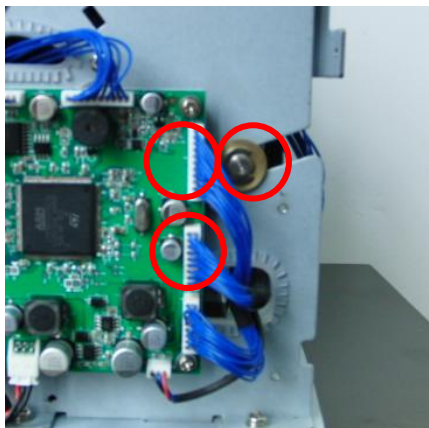
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	4NU00403002010	M4 hex screw		4
	4SC80040100210	M4x10 - hex socket		2
3	4TP00008030030	Retarding wheel shaft		1
	3RPA3100220010	Retarding wheel		2
	4PP52620100020	Feeder idler bracket		1
	4PP52610100010	Feeder idler		1
	4BE01220880010	Bearing 685		2
	4TP00005021020	Feeder idler shaft		1
	4TP10610600220	Clutch bearing holder		1
	BEHF0612R01010	Clutch bearing, HF0612R		1
	4BE01220840010	Bearing F688		1
	4WA60600000010	E-ring (Ø6)		1
	4WA60400000010	E-ring (Ø4)		1
	4WA60300000010	E-ring (Ø3.2)		2
	4SC80030080210	M3x6 Socket set screw		4
4	4PP52610100020	Retarding idler holder		1
	4TP00005030020	Retarding idler shaft		1
	4BE01190560010	Bearing 635		2

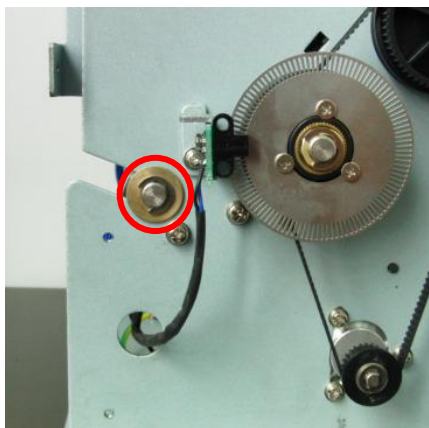
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	4SP01080040010	Upper bill path idler spring - L		1
	4SP01080040020	Upper bill path idler spring - R		1
	4SC90030060210	3x6-Round head w/ spring washer		1
5	4PP92010100020	Magnetic sensor housing		1
	MG000203B001	Magnetic sensor		1
	4SP011200700010	Spring for magnetic sensor		4
	4SC33030140220	3x14 - self tapping screw w/ washer		4
6	4PP52510100010	Upper Bill Path		1
	4PP92610100030	Retarding idler holder-L		2
	4PP92610100040	Retarding idler holder-R		2
	4SP01080040030	Upper bill path idler spring		2
	4BE01220860020	Bearing 698 w/PU ring		2
	4WA00800000010	φ8.*0.5t (Cooper)		4
	4OP351005-001	PCB-S		1
	4SC00030060210	M3x6 - Round head		4
7	3PP52400000160	Transmission receiver bracket		1

8	3PP82400000070	Transmission receiver mask		1
9	4OP351003-001	PBC-IRTR		1
	4SC00030060210	M3x6 - Round head		6

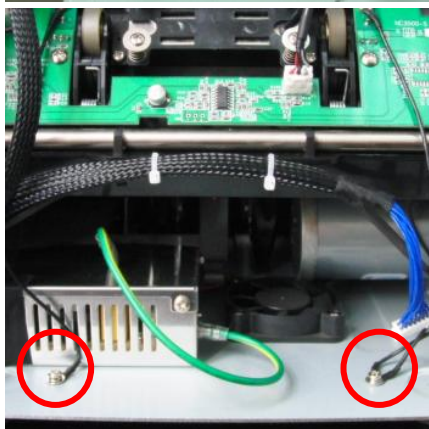


1. Turn the machine to right side.
  - a. Unplug the IRTR cable ( A to IRTR 18\*230 )
  - b. Unplug the S board cable ( A to S 11\*180 )
  - c. Remove the E-ring (Ø6) first and disassemble the top frame shaft from the machine
  - d. Release the cable from the Square Snap Bushing



2. Turn the machine to left side.
 

Remove the E-ring (Ø6) first and disassemble the top frame shaft from the machine



3. Turn the machine to the rear side
 

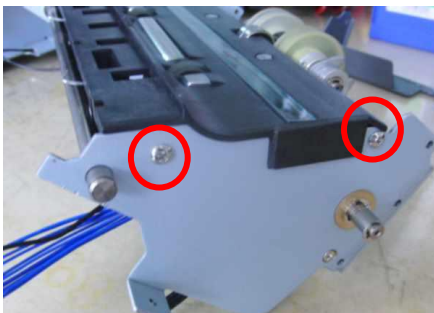
Loosen the screws (M3x6-Rround Head with spring washer) on the both sides of base plate and disassemble the ground cables from the machine.



4. The upper bill path module is free to be removed from the machine.



#### 5.3.1.1 Upper Bill Path Plate

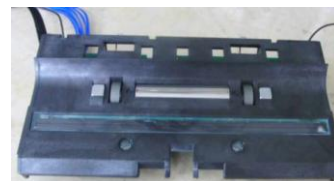


1. Turn the upper bill path module and have the sensor side up. Loosen the two screws (ST3\*10 self tapping screw) on the right side of the module.

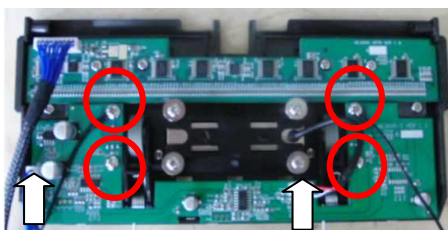


2. Turn the upper bill path module to the other side and Loosen the two screws (ST3\*10 self tapping screw)

Then the upper bill path can be removed from the module.



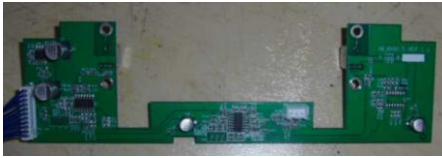
#### 5.3.1.2 NC3500 PCB -S board



1. Release the cables from the connectors.
2. Loosen the four screws (ST3\*10 self tapping screw) on the PCB-S board and remove the two ground cables.

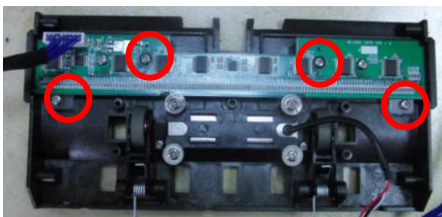
**\*Note:** When plugging in the cable on the

connectors, please make sure all the pins are well connected on the cable.



3. The PCB-S board is removed from the upper bill path module.

### 5.3.1.3 NC3500 PCB -IRTR Board



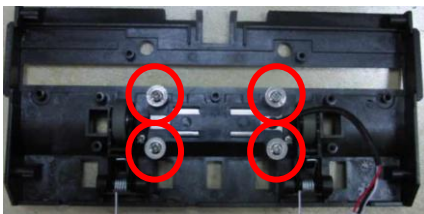
1. Loosen the four screws (M3x6 - Round head) on the PCB-IRTR board. The PCB-IRTR with Transmission receiver bracket can be pull out from the



2. Loosen the two screws (M3x6 - Round head) on the PCB-IRTR board. The underneath Transmission receiver bracket and mask can be separated from PCB.



### 5.3.1.4 Magnetic sensor

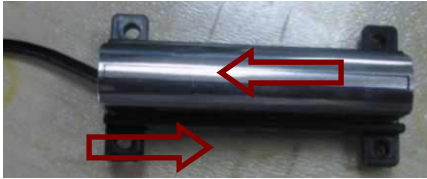


1. Loosen the four screws (3x14-self tapping screw w/ washer) on the bill path board.

The housing of magnetic sensor can be pulled off.

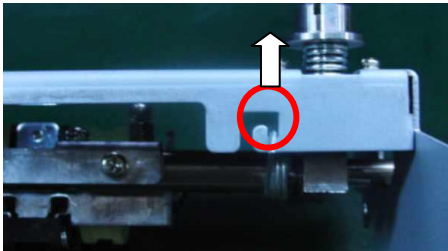




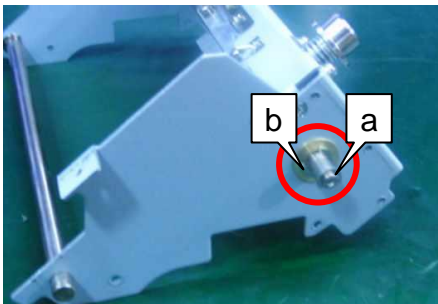


2. Push the sensor and housing from opposite direction to disassemble the sensor.

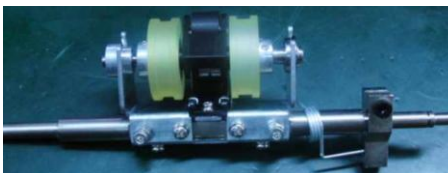
### 5.3.1.5 Retarding Wheel Module



1. Turn the retarding wheel module to rear side and use pliers to remove the Spring Torsion (1.5-Ø14) from the hook.



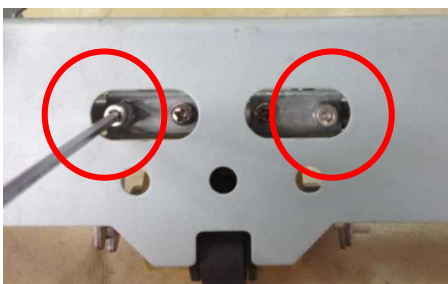
2. Turn the retarding wheel module to left side
  - a. Remove the E-ring (Ø4) first and disassemble the top module latch from the axis.



- b. Remove the E-ring (Ø6) and disassemble the top frame shaft from the module.

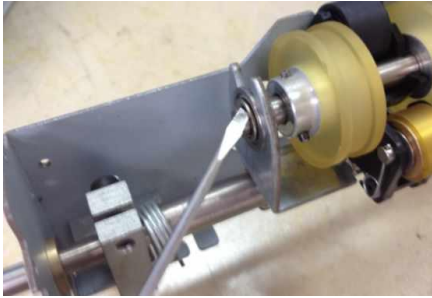
- c. Repeat the step a and b to disassemble the other side of retarding wheel module.

- d. The retarding wheel axis set can be moved out from the rack.

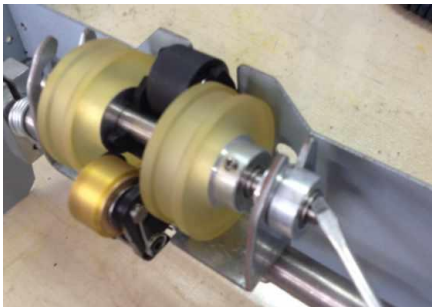


3. Turn the retarding wheel module to top side. Use a 3mm hex key to loosen the two hex flange (M4×10)





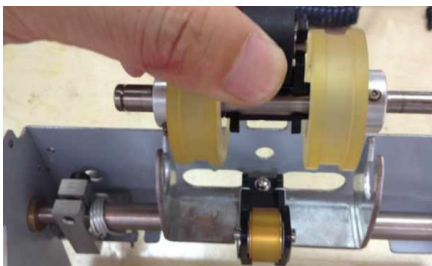
4. On the left side of wheel, remove the E-ring (Ø6) then lift the bearing F688 out of the rack °



5. Release the E-ring from the left side of shaft by using a screwdriver (-).



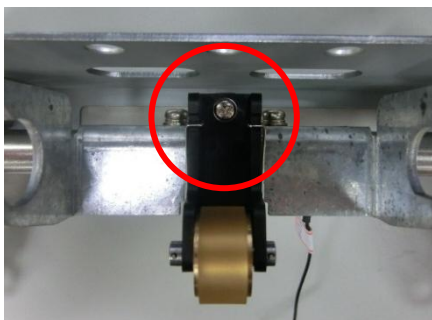
6. Remove the bearing from the retarding wheel shaft.



7. The retarding wheel is now free to be removed from the module



#### 5.3.1.6 Retarding Idler



1. Loosen the screw on the retarding idler.

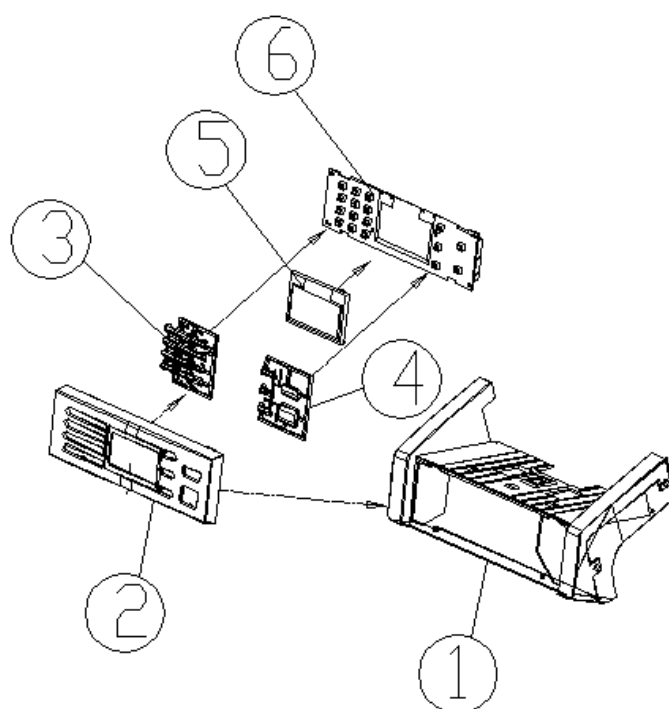


2. Remove the retarding idler from the upper bill path module.





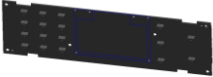



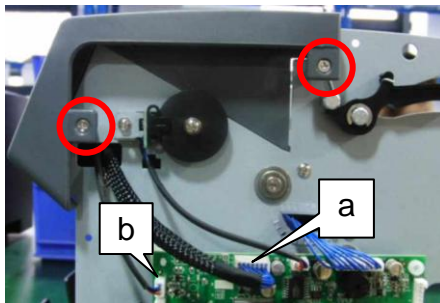
### 5.3.2 Control Panel Module



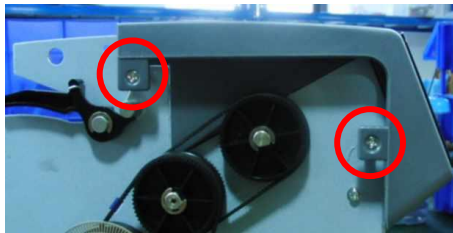
No.	Part Number	Part Name	Picture	Unit
1	4PP01010130010	Hopper		1
	4OP351008-001	PCB IRR		1
	4SC10030080210	M3x8 - Countersunk		5
	4NU00302502010	M3 hex screw		1
	4WA00300000020	Washer Ø3(Red)		1
	4OC04240000100	Harness fastener MWS-2		1
2	4PP01010120010	Front panel		1
	4SC33030140210	ST3*10 self tapping screw -w/ washer		2
3	4PP62010080020	Number Key		1

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4	4PP62010080030	Function Key		1
5	LD012864-001	LCD Panel		1
6	4OP351002-001	PCB UI		1
	4SC33030050210	ST3*6 self tapping screw		6



1. Turn the machine to right side and loosen the two screws (M3x8 - Countersunk) on the control panel module.
2. Unplug the UI (a) and hopper trigger (b) cables from the PCB-A board.

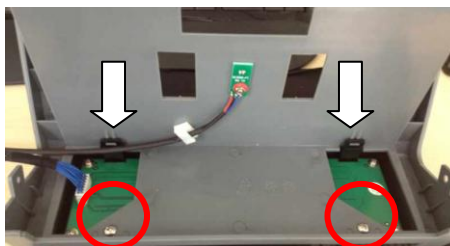


3. Turn the machine to left side and loosen the two screws (M3x8 - Countersunk) on the control panel module.

The control panel module is removed from the machine.



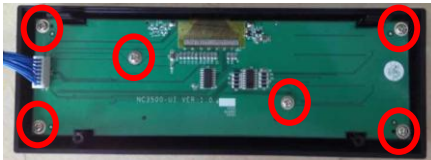
## 5.3.2.1 NC3500 PCB-UI Board



1. Turn the control panel module to the rear side.  
Loosen the two screws (ST3\*10 self tapping screw -w/ washer) on the control panel module.  
Release the tenon of control panel assembly from the control panel plate.



2. The control panel assembly is now free to be removed.



3. Turn the control panel to the rear side.

Loosen the six screws (ST3X6) on the NC3500-UI board.



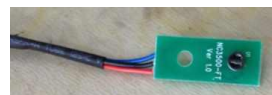
4. The NC3500-UI board and keypads are now free to be removed.



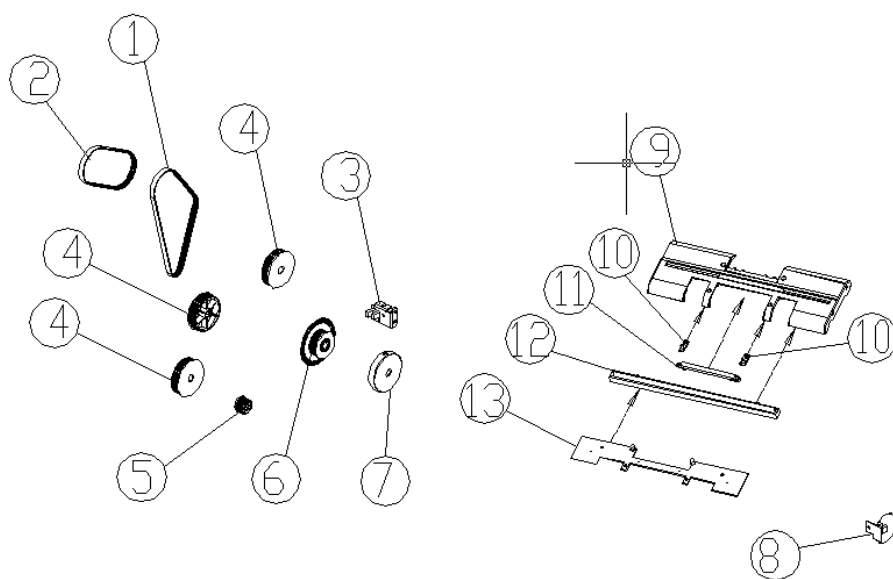
#### 5.3.2.2 NC3500 PCB - IRR Board

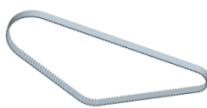








1. Loosen the screw (M3x8 – Countersunk) on the NC3500 PCB\_IRR board.
2. The NC3500 PCB IRR board is now removed from the hopper set.



### 5.3.3 Bottom Conveyor Module



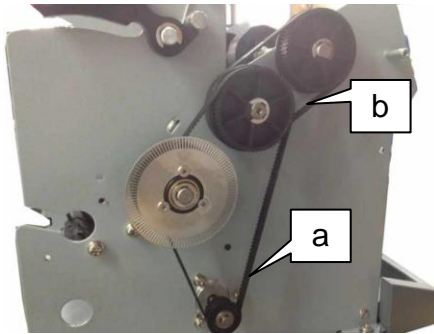
No.	Part Number	Part Name	Picture	Unit
1	4LB00MXL128010	Timing Belt 128		1
2	4LB00MXL088010	Timing Belt 88		1
3	4NC50803000030	Encoder Bracket		1
	4OP351007-001	PCB RJP		1
4	4GE60MXL631010	Transmission Gear		3
	4WA60600000010	E-ring (Ø6)		3
5	4GE60MXL261010	Motor Gear		1

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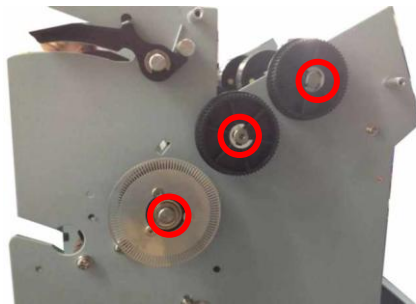
	4WA60300000010	E-ring (Ø3.2)		1
	4WA00500000010	Flat Washer (Ø5)		1
6	4NC90350000010	Encoder Plate		1
	4SC33030050210	ST3*6 self tapping screw		3
	4GE60MXL451010	Conveyer Gear		1
	4TP108160600220	Clutch bearing sleeve		1
	4BE20120812010	Bearing HF0812		1
	4WA60600000010	E-ring (Ø6)		1
7	4WA00800000010	Flat Washer (Ø8)0.5mm		2
	4TP20845100010	Counterweight		1
	4SC80040100220	M4x10 Socket set screw		1
8	4NC50803000020	Positioning Plate Bracket		1
	4OP351007-001	PCB RJP		1

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	4SC90030060210	3x6-Round head w/ spring washer		2
9	4PP52510100020	Bottom Conveyor Back Lid		1
	4SC33030140210	ST3*10 self tapping screw		2
	4SC13030080210	ST3*10 self tapping screw -Countersunk		2
10	4PP92000300020	LED Dummy		2
	4SC33030050210	ST3*6 self tapping screw		2
11	4OC23120000100	Neodymium magnet		1
	4SC33030040210	ST3*4 self tapping screw		2
12	3PP82100000030	Transmission light guide		1
	3PP52100110120	Transmission light guide holder		1
13	4OP351004-001	PCB IRTE		1
	4SC33030050210	ST3*6 self tapping screw		4
	4WA00300000020	Washer Ø3(Red)		2



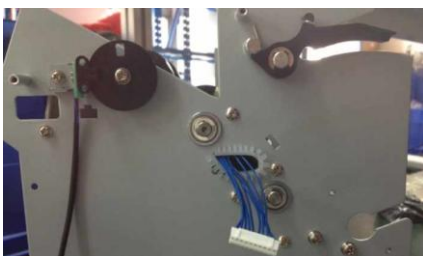
1. Turn the machine to the left side,  
Disassemble the Timing Belt 128 (a) and Timing Belt 88 (b).



2. Release the three E-rings ( $\varnothing 6$ ) on the shafts.  
Remove the three Transmission Gears ,  
Counterweight and Encoder plate.



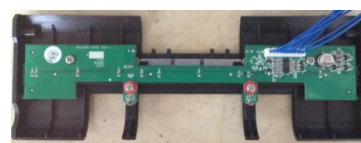
3. Loosen the two screws ( $\varnothing 3 \times 10$  self tapping screw – Countersunk)



4. Turn the machine to the right side,  
Loosen the two screws ( $\varnothing 3 \times 10$  self tapping screw – Countersunk)

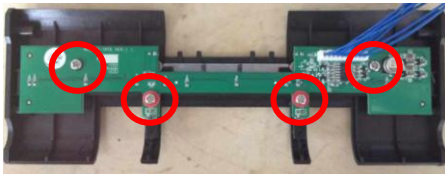


5. Turn the machine to the back,  
Pull out slowly the bottom conveyor plate.





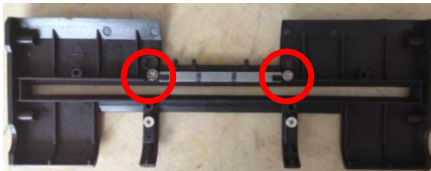
#### 5.3.4.1 NC3500 PCB -IRTE Board



1. Loosen the four screws (ST3\*6 self tapping screw) on the NC3500-IRTE board.  
The PCB IRTE can be disassembled from the plate.



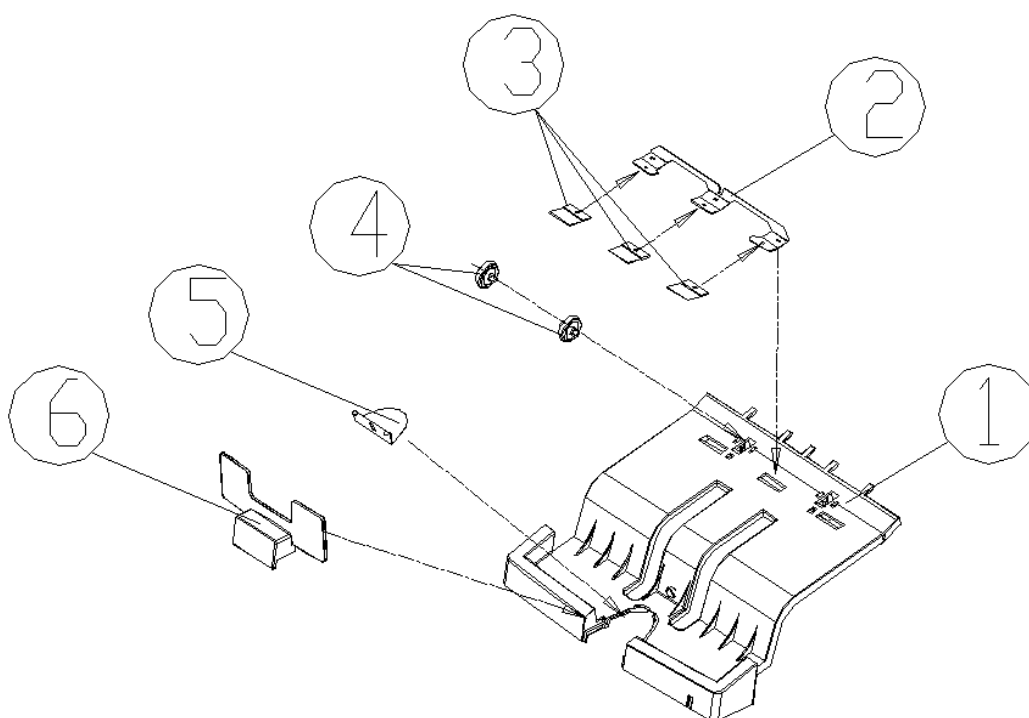
2. After removed the PCB IRTE, the Transmission light guide and holder can be take out from the back lid

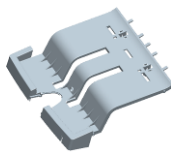
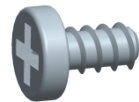


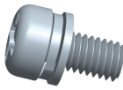



3. Loosen the two screws (ST3\*4 self tapping screw) on the back lid to remove the neodymium magnet

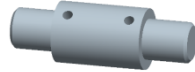






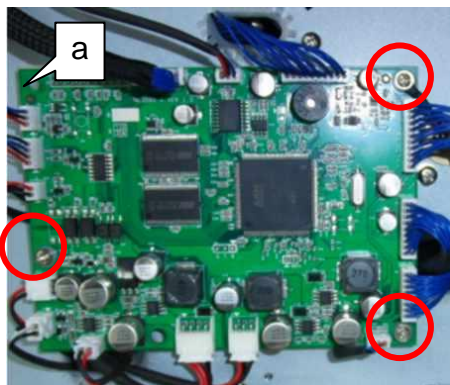
### 5.3.4 Stacker Module



No.	Part Number	Part Name	Picture	Unit
1	4PP22010120020	Stacker		1
	4SC33030050210	ST3*6 self tapping screw		3
2	4NC50803100010	Antistatic brush bracket		1
3	4OC0400001-001	Antistatic brush		3
	4SC90030060210	3x6-Round head w/ spring washer		3
4	4BE01220650020	Bearing 696 w/PU ring		2

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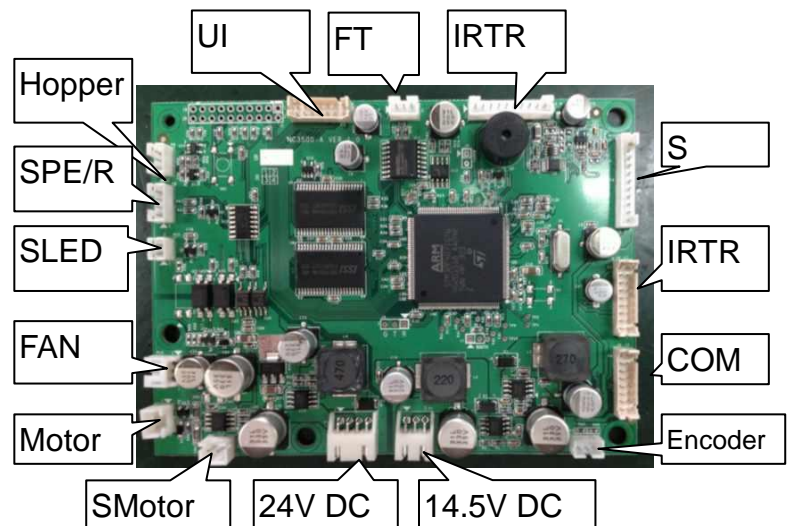
	4TP00006030010	Idle wheel shaft		2
	4SP01060020010	Idle wheel spring		2
5	4NC80300190020	Stacker cover		1
6	3PP92100040100	Stacker stopper		1
	4SC33030140210	ST3*10 self tapping screw -w/ washer		2



1. Turn machine to the right side and unplug all the cables on PCB A.

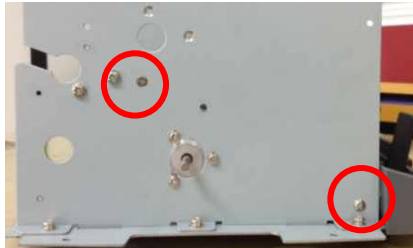
Loosen the three screws (M3x14 - Round head) on the PCB A and use pliers to release the PCB holder (a).

**\*Note:** The following are the positions of cables to the corresponded connector of PCB A board. Please make sure the connectors are properly fitted when assembling.





2. Loosen the two screws (ST3\*10 self tapping screw -w/ washer) on the side board



3. Turn the machine to left side and loosen the two screws (ST3\*10 self tapping screw -w/ washer) on the side board.



4. Turn to bottom side of the machine and loosen the two screws (ST3\*10 self tapping screw -w/ washer)

The stacker cover and stacker stopper can be removed from the stacker module.

The stacker module is now removed from the machine.



5. Turn to the back side of the stacker module and loosen the three screws ( M3x6 - Round head)

The antistatic brush bracket is now removed from the stacker.



6. To remove the idle wheel on the stacker, use the small screw driver to remove the idle wheel spring from the hook first.

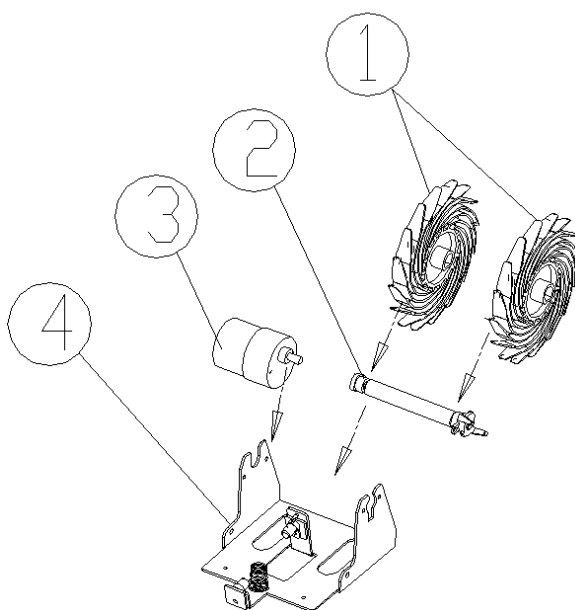



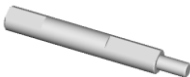


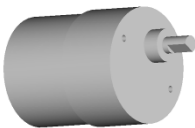

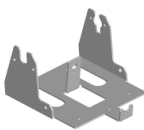
7. Use small screw to lift the shaft from the hook.

The idle wheel set can be removed from the stacker.



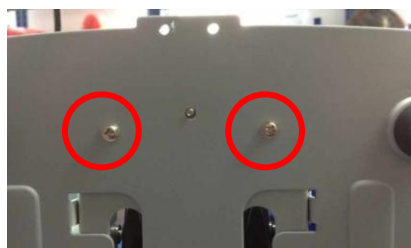
### 5.3.5 Impeller Module



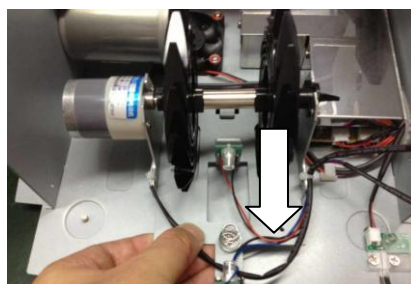
No.	Part Number	Part Name	Picture	Unit
1	3PPA2610100060	Impeller		2
2	4TP00010030020	Impeller shaft		1
	3PPA2610100040	Impeller fastener R		1
	3PPA2610100050	Impeller fastener L		1
3	4DM10905380010	Impeller Motor		1
	4SC00025040210	M2.5x4 -Round head screw		2
4	4NC50803000010	Impeller Bracket		1

4SP01300160080	Conductive spring		1
3PP82400000160	SPE sensor cover		1
3PP82400000150	SPR sensor cover		1
4OP351011-001	PCB SPR		1
4OP351012-001	PCB SPE		1
4SC90030060210	3x6-Round head w/ spring washer		3
4WA00300000010	Flat Washer (Ø3)		2
4SC00030060210	3x6-Round head screw		2

### 5.3.5.1 Impeller module



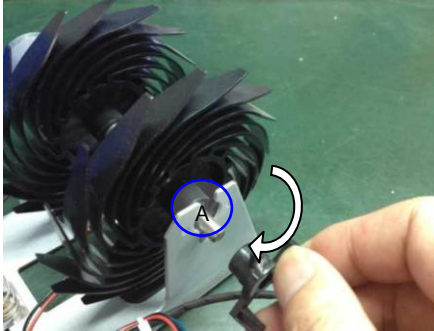
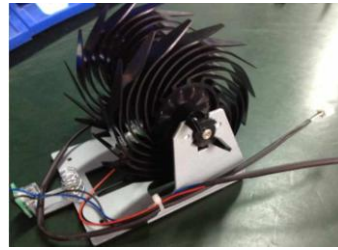
1. Turning to the bottom side of the machine and loosen the two screws (3x6-Round head)



2. Turn to the front side of machine and pull the impeller set forward.

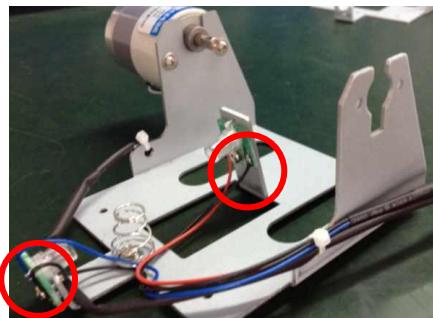
The impeller set can be taken out from the base.





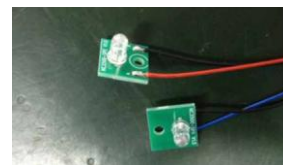
3. Twist the fastener ( Impeller fastener R ) clockwise to disassemble the impeller set..

The impeller set can be removed now.



4. Loosen the two screws (3x6-Round head) to disassemble the PCB SPE and SPR.

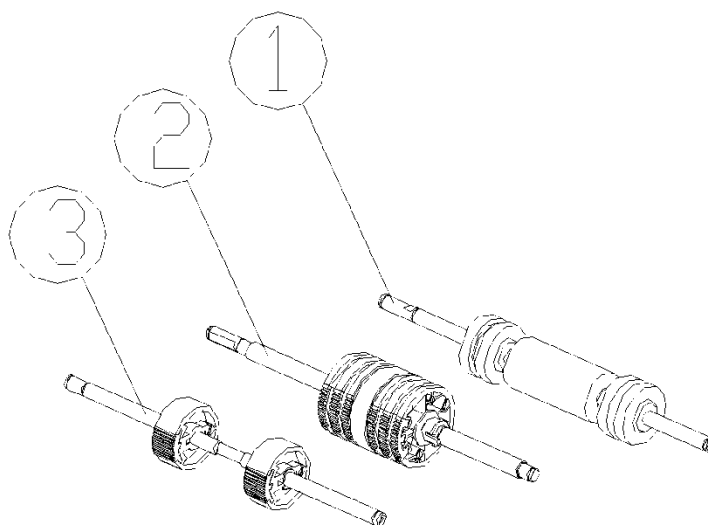
*\*Note: When assembling the stacker module, please make sure the both sensor covers are fitted the the hole on the stacker with proper position.*



5. Loosen the two screws (M2.5x4 -Round head) to disassemble the impeller motor (S-motor)



### 5.3.6 Roller Module

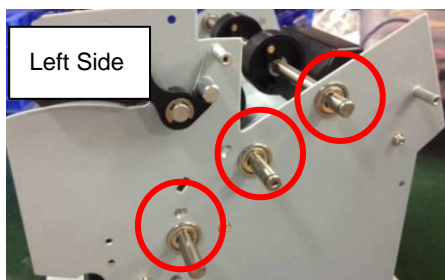


No	Part Number	Part Name	Picture	Unit
1	4TP00008030020	Conveyer roller shaft		1
	4RP03200100010	Conveyer Roller		9
	4BE01220840010	Bearing F688		2
	4WA60600000010	E-ring (Ø6)		2
2	4TP00010030010	Singler shaft		1
	3RPA3100220030	Singler Rim - side		2
	3RPA3100220040	Singler Rim - side		1

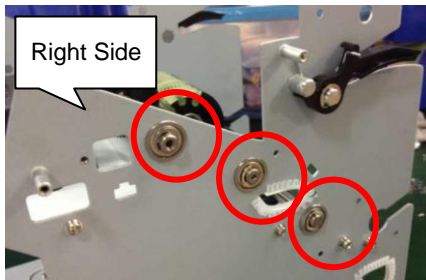


	3PPA2600100130	Singler roller holder		1
	4SC99030140010	Spring Pins		1
	4WA40120200020	Wave washer (Ø10)		1
	4WA60600000010	E-ring (Ø6)		2
	4BE01220840010	Bearing F688		2
	4WA01000000010	Flat Washer (Ø10)		1
3	4TP00008030010	Kicker roller shaft		1
	3PPA2200100040	Kicker Rim		2
	4RP03100220020	Kicker roller		2
	4SC99030140010	Spring Pins		2
	4BE01220840010	Bearing F688		2
	4WA60600000010	E-ring (Ø6)		4

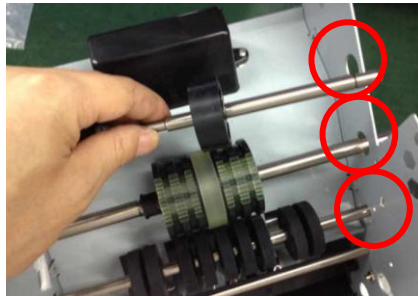
#### 5.3.6.1 Roller module



1. Release the three E-rings Ø6 from the shaft of kicker roller module on left side.

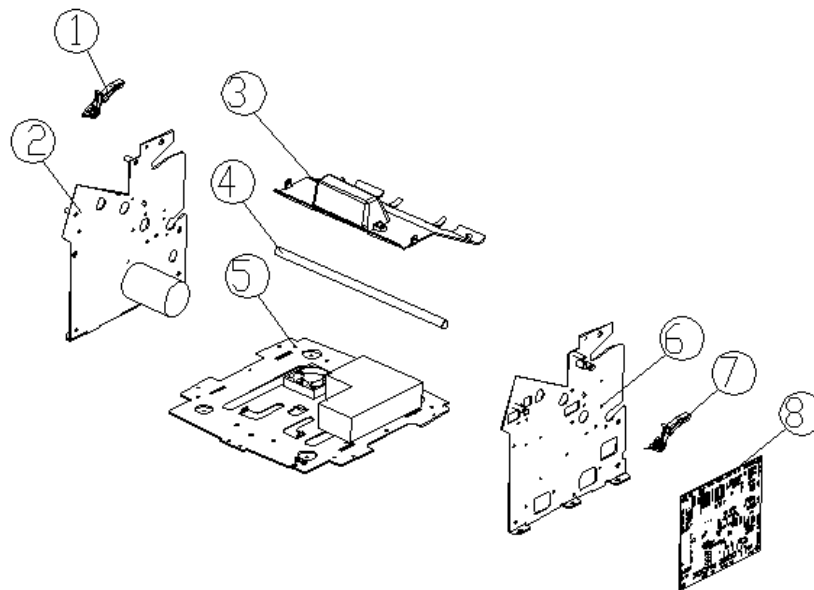





2. Release the three E-rings Ø6 from the shaft of kicker roller module on right side.



3. Release the bearings (F688) from the shaft of kicker roller module.

### 5.3.7 Base Module



No	Part Number	Part Name	Picture	Unit
1	3PP32600100070	Hopper guide- L		1
	4SP01110040010	Upper bill path idler spring - L		1
	4WA60600000010	E-ring (Ø6)		1

Service Manual – NC-3500 Series

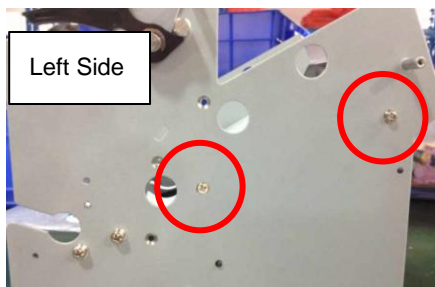
2	4NC30803000010	Base Module Chassis (Left)		1
	4DM12405450010	Main Motor		1
	4SC90040060210	4x6-Round head w/ spring washer		3
	4SC90030100210	3x10-Round head w/ spring washer		3
3	4NC90803000020	Base Module Chassis (Mid)		1
	4PP93010100020	Handle Cover		1
	4SC90030060210	3x6-Round head w/ spring washer		3
	4SC10030080210	M3x8 - Countersunk		1
	4SC00030060210	M3x6 - Round head		2
4	4TP00008030050	Supporting Shaft		1
	4SC90040100210	4x10-Round head w/ spring washer		2
5	4NC20803000010	Base Module Chassis (Bottom)		1
	4RP23200100010	Rubber foot NF015ST		4
	4SC90040100210	4x10-Round head w/ spring washer		4

Service Manual – NC-3500 Series

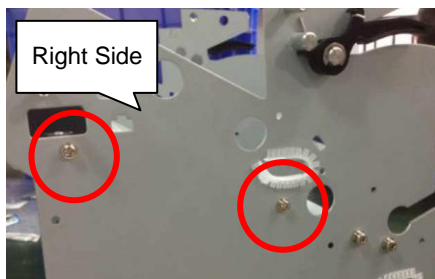
	PS000002A220	Switching Power		1
	4SC90030060210	3x6-Round head w/ spring washer		4
	4OC22240000100	12V DC Fan		1
	4SC00030140210	M3x14 - Round head		4
	4OC04240000100	Harness fastener MWS-2		3
6	4NC40803000010	Base Module Chassis (Right)		1
	4OC14240000200	Snap Bushing KG-016N		3
	4SC90040060210	4x6-Round head w/ spring washer		3
7	3PP42600100070	Hopper guide- R		1
	4SP01110040020	Upper bill path idler spring - R		1
8	4OP351001-001	PCB A		1
	4SC00030140210	M3x14 - Round head		3
	4OC00240000201	PCB holder2 (RSS-1)		3
	4OC00240000100	PCB holder (RSS-78)		3

4OC00240000301	PCB Isolation Pin		1
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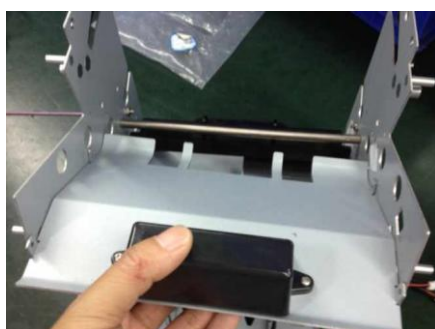
### 5.3.7.1 Base module



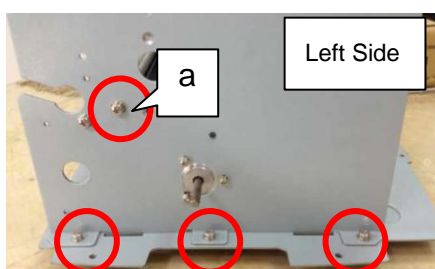
1. Loosen the two screws (3x6-Round head w/ spring washer) on the left side plate.



2. Loosen the two screws (3x6-Round head w/ spring washer) on the right side plate.

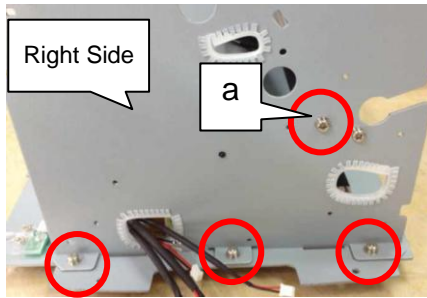


3. Pull out the middle chassis from the front side of the machine.



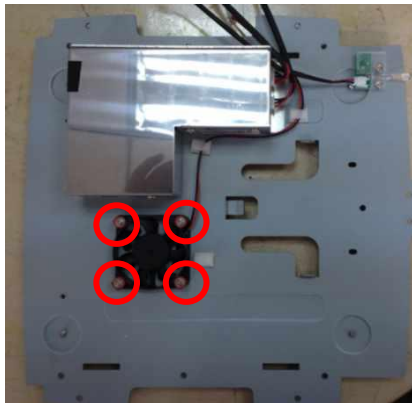
4. Loosen the screw (M4x10-Round head w/ spring washer) (a)

Loosen the three screws (4x6-Round head w/ spring washer) on base plate



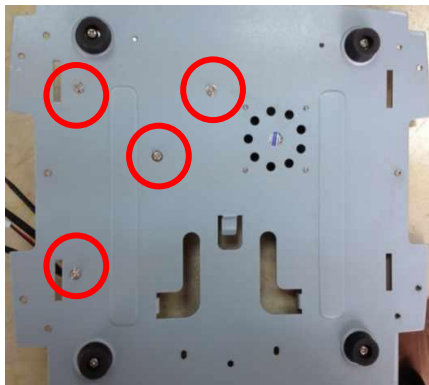
5. Loosen the screw (M4x10-Round head w/ spring washer) (a)

Loosen the three screws (4x6-Round head w/ spring washer) on base plate



6. The base plate and two side plates can be separated now.

To disassemble the fan, please loosen the four screws (3x6-Round head w/ spring washer)



7. Turn to the bottom of the base plate and loosen the four screws (3x6-Round head w/ spring washer) to remove the switching power.





## Chapter 6      Trouble Shooting

### 6.1 Definition of Message Codes

*Pls CheckStacker*

- ◆ Please remove the banknotes from the stacker. After removing them, the operation continues

*Pls CheckHopper*

- ◆ Please remove the banknotes from hopper and place them again.

*Check Bill Path*

- ◆ Error with top bill path, please open it and check no foreign matter inside.

*Stacker-Full*

- ◆ The stacker is full. Please remove the banknotes from the stacker.





## **Appendix A      Revision History**

<b>Rev. Ver:</b>	<b>Main Contents:</b>	<b>Date:</b>
<b>1.0</b>	Initial version.	May 26, 2013